UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,879	11/20/2003	Richard Johnson	TRAN-P185	3080

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EXAMINER
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ART UNIT	PAPER NUMBER
2135	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/719,879	JOHNSON ET AL.
	Examiner	Art Unit	
	Thanhnga B. Truong	2135	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>12 July 2007</u>.

2a)☒ This action is **FINAL.** 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-23</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-23</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This action is responsive to the communication filed on July 12, 2007.
Claims 1-23 are pending. At this time, claims 1-23 are rejected.

Response to Arguments

2.   Applicant's arguments with respect to claims 1-23 have been considered
but are moot in view of the new ground(s) of rejection.

        Applicant's arguments filed July 12, 2007 with respect to claim 22 have
been fully considered and are persuasive. The rejection of 35 USC 101 has been
withdrawn.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for
all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Hashimoto et al (US 6,983,374 B2), and further in view of Ellison et al (US
7,082,615 B1).

        a.   *Referring to claim 1, 8:*

                i.   Hashimoto teaches a memory architecture, comprising:

                (1)   an unprotected memory space configured to store
encrypted information, said encrypted information corresponding to a plain text version
thereof **(column 5, lines 30-33 and column 15, lines 66-67 of Hashimoto);**

                (2)   a first protected memory space configured to store at
least a subset of operating system instructions **(column 6, lines 20-29 of Hashimoto
and Figures 2, 9, and 10 for memory partitioning);** and

                (3)   a second protected memory space configured to store
said plain text version of said encrypted information **(column 10, lines 5-10 of
Hashimoto and Figures 2, 9, and 10 for memory partitioning);**

(4)   wherein said operating system instructions in said first protected memory space operate on said plain text version of said encrypted information in said second protected memory space **(column 9, lines 35-38 of Hashimoto and Figures 2, 9, and 10 for memory partitioning)**.

ii.   Although Hashimoto teaches a memory architecture with authentication key, which is another term of message digest, Hashimoto is silent on the capability of disclosing his memory as a flash memory. On the other hand, Elisson teaches both message digest and flash memory in **column 8, lines 55-65 of Ellison**.

iii.   It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1)   have modified the invention of Hashimoto with the teaching of Ellison to prevent illegal alternation of execution codes and processing target data under a multi-task program execution environment **(column 1, lines 8-10 of Hashimoto)**.

iv.   The ordinary skilled person would have been motivated to:

(1)   have modified the invention of Hashimoto with the teaching of Elisson to protect both the internally executed algorithm and the data state inside a memory region from illegal analysis in the multi-task environment even when the execution is stopped by the interruption **(column 4, lines 58-62 of Hashimoto)**.

b.   _Referring to claim 2:_

i.   Hashimoto further teaches: .

(1)   wherein said encrypted information comprises an instruction to load said encrypted information from said unprotected memory space into said first protected memory space **(column 10, lines 5-10 of Hashimoto and Figures 2, 9, and 10 for memory partitioning)**.

c.   _Referring to claim 3:_

i.   Hashimoto further teaches:

(1)   further comprising one or more instructions to decrypt said encrypted information in said first protected memory space to form said plain text version **(column 11, lines 21-26 of Hashimoto)**.

     d.   *Referring to claim 4:*

        i.   Hashimoto further teaches:

        (1)   wherein said encrypted information comprises an instruction to store at least one of (i) said encrypted information in said first protected memory space, (ii) said plain text version in said first protected memory space, and (iii) said plain text version in said second protected memory space **(column 9, lines 35-38; column 10, lines 5-10 of Hashimoto and Figures 9 and 10 for memory partitioning).**

     e.   *Referring to claim 5:*

        i.   Hashimoto further teaches:

        (1)   wherein said unprotected memory space is further configured to store executable code and data **(column 15, lines 49-52 of Hashimoto).**

     f.   *Referring to claim 6:*

        i.   Hashimoto further teaches:

        (1)   wherein said subset of operating system instructions comprises at least one member selected from the group consisting of: fetching or pre-fetching at least part of said executable code and data; interpreting at least part of said executable code and data; translating at least part of said executable code and data; and determining whether information in said unprotected memory space comprises encrypted information **(column 10, line 56 through column 11, line 4 of Hashimoto).**

     g.   *Referring to claim 7:*

        i.   Hashimoto further teaches:

        (1)   further comprising a third protected memory configured to store said plain text version after at least one operating system instruction has operated thereon **(column 10, line 56 through column 11, line 4 of Hashimoto).**

     h.   *Referring to claim 8:*

        i.   The combination of teaching between Hashimoto and Ellison teaches the claimed subject matter. Ellison further teaches:

        (1)   wherein said first protected memory space comprises flash memory **(column 8, lines 55-65 of Ellison).**

      i.   *Referring to claim 9:*

        i.   The combination of teaching between Hashimoto and Ellison teaches the claimed subject matter. Hashimoto and Ellison further teaches:

        (1)   wherein said first protected memory space further comprises a table linking said message digest to said plain text version in said second protected memory space **(see Figures 9 and 10 and column 15, lines 46-48 of Hashimoto; and column 8, lines 55-65 of Ellison).**

      j.   *Referring to claim 10:*

        i.   Hashimoto further teaches:

        (1)   wherein said table comprises a non-zero location of said plain text version in said second protected memory space **(see Figures 9 and 10 and column 15, lines 46-48 of Hashimoto).**

      k.   *Referring to claim 11:*

        i.   Hashimoto further teaches:

        (1)   wherein said first protected memory space further comprises a table or list linking a unique identifier for said encrypted information to a pointer for at least one of (i) a location of said plain text version and (ii) a location of a decryption tool for decrypting said encrypted information **(see Figures 9 and 10 and further details on column 7, lines 42-50 of Hashimoto).**

      l.   *Referring to claim 12:*

        i.   This claim consist a system for operating on encrypted information to implement claim 1, thus it is rejected with the same rationale applied against claim 1 above.

      m.   *Referring to claim 17:*

        i.   This claim has limitations that is similar to those of claims 1 and 3, thus it is rejected with the same rationale applied against claims 1 and 3 above.

      n.   *Referring to claims 18-21:*

        i.   These claims have limitations that is similar to those of claims 1-8, thus they are rejected with the same rationale applied against claims 1-8 above.

o.   *Referring to claim 22:*

i.   Hashimoto further teaches:

(1)   wherein said protected memory comprises random access memory **(see Figure 1, element 2103, where main memory is another name of RAM)**.

p.   *Referring to claim 23:*

i.   This claim consist a system for hiding information to implement claim 1, thus it is rejected with the same rationale applied against claim 1 above.

q.   *Referring to claims 13-16:*

i.   Hashimoto further teaches:

(1)   wherein said unprotected memory space comprises at least part of a hard disk; said first protected memory space comprises at least part of a first ROM; wherein said second protected memory space comprises at least part of a second ROM; and at least one peripheral device configured to operate in accordance with said encrypted information (see Figures 1 and 2 of Hashimoto).

ii.   Although Hashimoto teaches the memory architecture, which is well known in the art that could be implemented into any computer system, Hashimoto is silent on the capability to show the entire computer system which includes the microprocessor, memory, and its peripheral. On the other hand, Ellison teaches these elements **(see Figure 1 and column 4, line 38 through column 5, line 27 of Ellison)**.

iii.   It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1)   have modified the invention of Hashimoto with the teaching of Barnett to prevent illegal alternation of execution codes and processing target data under a multi-task program execution environment **(column 1, lines 8-10 of Hashimoto)**.

iv.   The ordinary skilled person would have been motivated to:

(1)   have modified the invention of Hashimoto with the teaching of Barnett to protect both the internally executed algorithm and the data state inside a memory region from illegal analysis in the multi-task environment even when the execution is stopped by the interruption **(column 4, lines 58-62 of Hashimoto).**

Conclusion

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

a.   Albrech et al (US 5,835,594) discloses methods and apparatus for preventing unauthorized write access to a protected non-volatile storage (see title).

b.   Albrech et al (US 6,510,521 B1) discloses methods and apparatus for preventing unauthorized write access to a protected non-volatile storage (see title).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhnga (Tanya) Truong whose telephone number is 571-272-3858.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached at 571-272-3859. The fax and phone numbers for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Charanjit B. T.
Primary Examiner

TBT

September 21, 2007